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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,339	08/20/2001	Tetsuya Yokomoto	33857-00009	5976

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EXAMINER	
RYMAN, DANIEL J	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 09/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/933,339	YOKOMOTO ET AL.	
	Examiner	Art Unit	
	Daniel J. Ryman	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 August 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 August 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/20/2001*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: ref. 2-11 (see Fig. 9). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art in view of Doshi et al. (USPN 6,055,242).

4. Regarding claim 1, Applicant admits as prior art a PON transmission system connecting an optical line terminator on a local exchange side and a plurality of optical network units on a

subscriber side, using fiber-optic cables and an optical star coupler therebetween (Figs. 1-5 and page 1, line 9-page 10, line 17), wherein: said optical line terminator on the local exchange side comprises PON transmitting means on the local exchange side for sending out a PON downstream transmission frame to the fiber-optic cable and for receiving a PON upstream transmission frame from the fiber optic cable (Figs. 1-5 and page 1, line 9-page 10, line 17), the PON downstream transmission frame having an STM signal transmission field set in units of cells or an ATM signal transmission field set in units of cells, and a plurality of cells having fixed lengths (Figs. 1-5 and page 1, line 9-page 10, line 17), and the PON upstream transmission frame having the STM signal transmission field set in units of cells or the ATM signal transmission field set in units of cells, and the plurality of cells having fixed lengths (Figs. 1-5 and page 1, line 9-page 10, line 17); and said optical network unit on the subscriber side comprises PON transmitting means on the local exchange side for sending out a PON upstream transmission frame to the fiber optic cable and for receiving a PON downstream transmission frame from the fiber-optic cable (Figs. 1-5 and page 1, line 9-page 10, line 17), the PON upstream transmission frame having the STM signal transmission field set in units of cells or an ATM signal transmission field set in units of cells and the plurality of cells having fixed lengths (Figs. 1-5 and page 1, line 9-page 10, line 17), and the PON downstream transmission frame having the STM signal transmission field set in units of cells or the ATM signal transmission field set in units of cells coexisting therein, and the plurality of cells having fixed lengths (Figs. 1-5 and page 1, line 9-page 10, line 17).

Applicant does not admit as prior art using the PON downstream transmission frame having an STM signal transmission field set in units of cells and an ATM signal transmission

field set in units of cells coexisting therein, and a supervisory control information transmission field storing information on making allocation of said signal transmission fields in units of cells, designating a way to make the STM signal transmission field and the ATM signal transmission field coexist, and the PON upstream transmission frame having the STM signal transmission field set in units of cells and the ATM signal transmission field set in units of cells coexisting therein, and a supervisory control information transmission field storing information on making allocation to said transmission fields in units of cells, designating the way to make the STM signal transmission field and the ATM signal transmission field coexist. Doshi teaches, in an optical communication system, using an optical network downstream transmission frame having an STM signal transmission field set in units of cells (col. 2, lines 16-26 and col. 3, lines 45-53) and an ATM signal transmission field set in units of cells coexisting therein (col. 2, lines 16-26 and col. 3, lines 45-53), and a supervisory control information transmission field (FCF) storing information on making allocation of said signal transmission fields in units of cells, designating a way to make the STM signal transmission field and the ATM signal transmission field coexist (col. 8, lines 15-24), and an optical network upstream transmission frame having the STM signal transmission field set in units of cells (col. 2, lines 16-26 and col. 3, lines 45-53) and the ATM signal transmission field set in units of cells coexisting therein (col. 2, lines 16-26 and col. 3, lines 45-53), and a supervisory control information transmission field (contention region) storing information on making allocation to said transmission fields in units of cells, designating the way to make the STM signal transmission field and the ATM signal transmission field coexist (col. 13, lines 38-50 and col. 14, lines 47-60) where information in the contention region is used to structure the subsequent frames. Doshi does this in order to transport a wide variety of digital

services over a single network (col. 1, line 47-col. 2, line 11). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a PON downstream transmission frame and a PON upstream transmission frame having a STM signal transmission field and an ATM signal transmission field coexisting therein, together with accompanying signaling, in order to transport a wide variety of digital services over a single network.

5. Regarding claim 2, Applicant in view of Doshi discloses that the PON transmitting means on the subscriber side requests the optical line terminator on the local exchange side to set the STM signal transmission field and the ATM signal transmission field on said PON downstream transmission frame, by using a supervisory control information transmission field on the PON upstream transmission frame (Doshi: col. 1, line 47-col. 2, line 11); said PON transmitting means on the local exchange side sets the STM signal transmission field and the ATM signal transmission field according to the request, and notifies said PON transmitting means on the subscriber side by using the supervisory control information transmission field on the PON downstream transmission frame (Doshi: col. 1, line 47-col. 2, line 11); and said PON transmitting means on the subscriber side and said PON transmitting means on the local exchange side send and receive an STM signal and an ATM signal according to the setting (Doshi: col. 1, line 47-col. 2, line 11).

6. Regarding claim 3, Applicant admits as prior art an ATM-PON transmission system connecting an optical line terminator on a local exchange side and a plurality of optical network units on a subscriber side, using fiber-optic cables and an optical star coupler therebetween (Figs. 1-5 and page 1, line 9-page 10, line 17), wherein: said optical line terminator on the local exchange side comprises ATM-PON transmitting means on the local exchange side (Figs. 1-5

and page 1, line 9-page 10, line 17): for sending out the ATM-PON downstream transmission frame to the fiber-optic cable with an ATM signal transmission field (Figs. 1-5 and page 1, line 9-page 10, line 17), and for receiving an ATM-PON upstream transmission frame from the fiber-optic cable with the ATM signal transmission field (Figs. 1-5 and page 1, line 9-page 10, line 17); and wherein said optical network unit on the subscriber side comprises ATM-PON transmitting means on the subscriber side for sending out the ATM-PON upstream transmission frame to the fiber-optic cable with the ATM signal transmission field (Figs. 1-5 and page 1, line 9-page 10, line 17), and for receiving the ATM-PON downstream transmission frame from the fiber-optic cable with the ATM signal transmission field (Figs. 1-5 and page 1, line 9-page 10, line 17).

Applicant does not admit as prior art providing a cell in an ATM-PON downstream transmission frame for storing supervisory control information in order to store instructional information to accommodate an STM signal in an ATM-PON transmission frame, or sending out the ATM-PON downstream transmission frame and the ATM-PON upstream transmission frame to the fiber-optic cable with an STM signal transmission field and an ATM signal transmission field coexisting therein according to the instructional information. Doshi teaches, in an optical communication system, providing a cell in an optical network downstream transmission frame for storing supervisory control information (FCF) in order to store instructional information to accommodate an STM signal in an ATM transmission frame (col. 8, lines 15-24), and sending out the downstream transmission frame and the upstream transmission frame to the fiber-optic cable with an STM signal transmission field and an ATM signal transmission field coexisting therein according to the instructional information (col. 2, lines 16-26 and col. 3, lines 45-53).

Doshi does this in order to transport a wide variety of digital services over a single network (col. 1, line 47-col. 2, line 11). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a PON downstream transmission frame and a PON upstream transmission frame having a STM signal transmission field and an ATM signal transmission field coexisting therein, together with accompanying signaling, in order to transport a wide variety of digital services over a single network.

7. Regarding claim 4, Applicant admits as prior art an optical network unit of an ATM-PON transmission system connecting an optical line terminator on a local exchange side and a plurality of optical network units on a subscriber side, using fiber-optic cables and an optical star coupler therebetween (Figs. 1-5 and page 1, line 9-page 10, line 17), comprising: extracting means for extracting information in an ATM-PON transmission frame which is sent out from the optical line terminator on the local exchange side (Figs. 1-5 and page 1, line 9-page 10, line 17); and transmitting means for transmitting the ATM-PON transmission frame with the ATM signal (Figs. 1-5 and page 1, line 9-page 10, line 17).

Applicant does not admits as prior art extracting means for extracting instructional information to accommodate an STM signal in an ATM-PON transmission frame, said instructional information being stored in a cell which is for storing supervisory control information and which is in the ATM-PON transmission frame sent out from the optical line terminator on the local exchange side; and transmitting means for inserting the STM signal into the cell according to the extracted instructional information, and for transmitting the ATM-PON transmission frame with the STM signal and an ATM signal coexisting therein. Doshi teaches, in an optical communication system, extracting a cell in an optical network upstream transmission

frame for storing supervisory control information (FCF) in order to extract instructional information to accommodate an STM signal in an ATM transmission frame (col. 8, lines 15-24), and sending out the downstream transmission frame and the upstream transmission frame to the fiber-optic cable with an STM signal transmission field and an ATM signal transmission field coexisting therein according to the instructional information (col. 2, lines 16-26 and col. 3, lines 45-53). Doshi does this in order to transport a wide variety of digital services over a single network (col. 1, line 47-col. 2, line 11). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a PON downstream transmission frame and a PON upstream transmission frame having a STM signal transmission field and an ATM signal transmission field coexisting therein, together with accompanying signaling, in order to transport a wide variety of digital services over a single network.

8. Regarding claim 5, Applicant admits as prior art an optical line terminator of an ATM-PON transmission system connecting an optical line terminator on a local exchange side and a plurality of optical network units on a subscriber side, with using fiber-optic cables and an optical star coupler therebetween (Figs. 1-5 and page 1, line 9-page 10, line 17), comprising: transmitting means for transmitting the ATM signal (Figs. 1-5 and page 1, line 9-page 10, line 17).

Applicant does not expressly disclose transmitting means for storing instructional information to accommodate an STM signal in a cell in an ATM-PON transmission frame for storing supervisory control information, for inserting the STM signal into the cell in the ATM-PON transmission frame, according to the instructional information, and for transmitting the STM signal and an ATM signal coexisting in the ATM-PON transmission frame. Doshi

teaches, in an optical communication system, providing a cell in an optical network downstream transmission frame for storing supervisory control information (FCF) in order to store instructional information to accommodate an STM signal in an ATM transmission frame (col. 8, lines 15-24), and sending out the downstream transmission frame and the upstream transmission frame to the fiber-optic cable with an STM signal transmission field and an ATM signal transmission field coexisting therein according to the instructional information (col. 2, lines 16-26 and col. 3, lines 45-53). Doshi does this in order to transport a wide variety of digital services over a single network (col. 1, line 47-col. 2, line 11). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a PON downstream transmission frame and a PON upstream transmission frame having a STM signal transmission field and an ATM signal transmission field coexisting therein, together with accompanying signaling, in order to transport a wide variety of digital services over a single network.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Keller et al. (USPN 5,943,344) see entire document which pertains to formatting synchronous and asynchronous data for transmission on a single frequency, where wireless communication is analogous to HFC communication, as stated in Doshi (col. 1, lines 15-23). Ghaibeh et al. (USPN 5,926,478) see entire document which discloses transmitting various types of ATM packets, including synchronous packets, on a PON.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 7:00-4:30 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel J. Ryman
Examiner
Art Unit 2665

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